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FEDERAL COMMUNICATIONS
COMMISSION
OFFICE OF THE
SECRETARY

January 14, 1992

Chairman Alfred Sikes
Federal Communication Commission
1919 M Street
WASHINGTON D. C.

ET Docket No. 92-9

Dear Chairman Sikes:

As chairman of the APCO Project 28 Steering Board, I want to personally thank you for the additional opportunity to respond to General Docket No. 90-314. As the designated representative of the National Association of State Telecommunications Directors (NASTD) to Project 28, I am obligated to express our deep concern with any effort to arbitrarily reallocate our existing 1.8 to 2.2 GHz microwave spectrum.

In general, our members are concerned with the following issues:

I. In our opinion, it is functionally and economically impossible to replace the existing 1.8 to 2.2 GHz microwave frequencies with higher frequency bands of fiber optic cable.

A. Transferring existing license to higher frequencies will require most licensees to develop and construct additional transmitter sites, which can cost in excess of \$750,000.00 each.

B. Environmental considerations may prohibit construction of sites where intermediate sites are required.

C. The development of new sites may require the construction of new roads and power lines.

D. Geographical and topological conditions may not match transmitter site requirements. For example, the mountain or hill in the middle may not exist.

E. Land may not be available, for sale or lease, to construct new sites on. In some states, like Florida for example, microwave systems are constructed across environmentally protected swamps, severely limiting the opportunity to construct intermediate transmitter sites.

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F. Sites, road and power line design, engineering and construction costs, may be prohibitive.

G. In addition to having to add the cost of more sites, roads, buildings, and towers; the existing 2 GHz licensee real costs will be significantly increased by additional equipment depreciation, maintenance and operational costs.

H. Additional transmitter sites create additional points of failure.

I. We seriously question the ability of the Federal Government to insure timely and adequate financial restitution for the implementation of alternate technologies. The existing public safety users cannot fund this process with public monies.

J. A redundant fiber network, that served all of the State of Utah's transmitter sites, would cost us \$110,320,000.00, assuming we could drag cable over line-of-site paths at an average cost per mile of \$40,000.00. However, since most microwave paths in the West traverse mountains, our actual fiber routes would be considerably longer and far more expensive than \$40,000.00 per mile.

II. We are not convinced the commission fully understands the issues and limitations of using fiber optic cable to replace existing RF technologies. Therefore, we would respectfully request you carefully consider the following:

A. Many of the public safety microwave systems provide both inter-city and intra-system communication paths. Therefore, they terminate at downtown sites where they drop a large number of channels for voice, data, fax, mobile radio, and other telecommunication functions. They also terminate at microwave repeater sites where they terminate a limited number of land mobile and other public safety voice, data and telemetry functions. This allows us to maximize the use of our repeater facilities.

B. It is highly questionable that it would ever make economic or operational sense to drag fiber to remote microwave repeater sites.

1. Cost of fiber installation in difficult terrain, such as mountains, swamps, or other remote areas, could exceed \$100,000.00 per mile.

2. Fiber routes, by virtue of the technology, are far more susceptible to environmental disaster.

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3. Difficulty and expense of attempting to maintain fiber in 20 feet of snow or under 18 feet of swamp water, may make the cost of this option prohibitive.

4. Extreme difficulty and excessive cost of obtaining right-away easement to all the required sites. For example; within the state of Utah, we have over 1327 primary route miles of microwave.

5. Microwave path lengths are generally calculated on airline miles, which means the actual fiber optic cable routes would, by necessity, be from 30 to 50% longer.


6. Terminating a 100 gigabit fiber network to replace 45 megabit microwave system, at many of these repeater sites, would not make economic sense.

The states that I represent through NASTD, and the public safety agencies we all represent in Project 28, unalterably oppose the wholesale reallocation of 2 GHz microwave spectrum without any clear and concise federal funding and system implementation plan. In our opinion, the Federal Communication Commission would be remiss in their regulatory responsibilities if they fail to protect this Nation's critical public safety services.

Please be assured our members, and the states, cities and counties they represent, are ready and willing to work with the commission and congress in resolving this difficult and complex regulatory issue. As users of this Nation's critical finite spectrum resource, we recognize our responsibility to utilize it in the most efficient and cost effective manner possible. Accordingly, we remain willing to consider any reasonable options. Unfortunately, what has been proposed, to date, does not fall under that classification.

Please accept my sincere thanks and appreciation for your consideration of our perspective on this critical issue. We look forward to working in partnership with the Commission in resolving this problem.

Cordially,



Craig M. Jorgensen
Chairman, Project 28

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cc: Project 28 Steering Committee
APCO Board of Officers
NASTD Board of Officers
John Lane of Wilkes, Artis, Hedrick and Lane
Senator Jake Garn
Senator Orrin Hatch
Representative Wayne Owens
Representative James Hansen
Representative Bill Orton